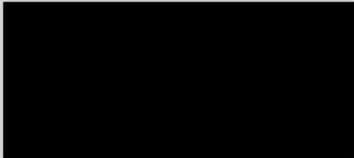




Internal Decay Assessment



July 2023

Introduction

Terms of Reference

Tracy Clarke Tree Consultancy Ltd are instructed by Spedan Tower MCL to carry out an Internal Decay Assessment to determine whether or not T133 (shown on the plan at Appendix A) is within safe parameters regarding its structural integrity.

The site was visited on 17 July 2023

The Site

The site address:

Savoy Court

Firecrest Drive

NW3 7NF

The Local Authority: London Borough of Camden

Summary of Assessment

The oak tree T133 is currently not within safe parameters

The tree can be retained with a reduction in wind loading - pruning the crown back to previous points is recommended.

A re-assessment of the extent of decay should be carried out in 3 years



Tree Location



Google Earth - T133

Method of Assessment

Initially a Formal Inspection of the tree is carried out. This follows a structured process called Visual Tree Assessment (VTA). The tree is inspected from ground level, the health of the tree assessed, and any obvious defects identified.

This assessment also determines whether the tree is suitable for a Stability Assessment.

The tree is recorded, and if it shows a defect that requires remedial action, prioritised recommendations for work are given.

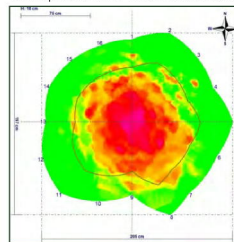
If no work is required, this is specified.

The following data is collected:

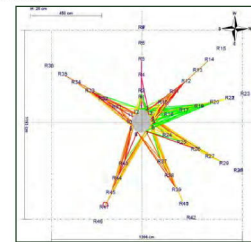
- Tree will be plotted individually using tree survey mapping software
- The position of tree is estimated using GPS
- Tree reference number
- Tree tag number (the tree may be tagged if one does not exist)
- Species
- Estimated height (m)
- Estimated stem diameter (cm) measured at 1.5m above ground level
- Estimated crown spread diameter (m)
- Life stage
- Physiological condition
- Structural condition
- Notes and observations of defects
- Recommended works
- Bat Roost Potential
- Works will usually be prioritised to within – Immediate / 7 days / 3 Months / 6 Months / 1 Year

THREATS (Tree Hazard:Risk Evaluation and Treatment System) method

Using tomography we are able to 'map' the decay using non invasive methods. Stress waves travel through sound wood faster than dysfunctional wood. Sensors placed around the tree allow us to measure the time it takes an impulse to travel through the wood and reach the other sensors, so we get an impression of the internal condition of a tree.

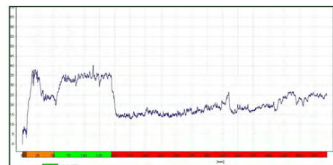


Example of tomogram



Tomogram showing roots

There are occasionally circumstances where tomography is not suitable, such as assessing decay present in buttress roots. In these situations we use the Resistograph which is a very fine drill that measures resistance as it travels through the wood. It provides graphical information on the internal structure of the tree at the points of drilling. Usually decayed wood has a lower resistance and the results of drilling combined with our knowledge and experience allows us to provide evidence based recommendations for the tree.



Resistograph read out



Mature Oak tree with Arbotom sensors around the stem

Scope and Limitations

The tree has been inspected from ground level only applying Mattheck's (1994) Visual Tree Assessment method (VTA)*.

Recommended timing of works may be prioritised with guidance from the THREATS system of risk evaluation and treatment**, and by following the guidance produced by The National Tree Safety Group's report 'Common sense risk management of trees' (2011)***.

Tree positions are approximate only.

Observations and recommendations of the tree in this report do not allow for extreme weather events. It is recommended that a High Winds Policy is developed to manage Tree Risk during storms.

The tree should be inspected following storms and extreme weather events to identify any damage or changes in condition of the tree that may have occurred.

All recommendations are given in the context of the site's current use.

Trees are dynamic living organisms, and subject to changes in their condition. They are susceptible to effects from disease, weather and changes to their surrounding environment.

The assessment of the tree within this report is valid for one year from the date of inspection.

*Mattheck, C.Broeler, H. (1994), The body language of trees.A handbook for failure analysis- Research for Amenity Trees No.4 Research for Amenity Trees

**Forbes-Laird, J. L. (2009) TREE HAZARD: RISK EVALUATION AND TREATMENT SYSTEM - THREATS

***NTSG (2011): COMMON SENSE RISK MANAGEMENT OF TREES (Forestry Commission, Edinburgh)

Best Practice

Any works recommended will have been given a priority - a timescale that the works need to be carried out. However, where possible within these timescales it is beneficial to the tree if major works are undertaken during periods of lower functional activity. This may be during the winter when the tree is dormant (November to end of February), or during late July to the end of August when the tree is less active. During these periods the tree is better able to react to wounding and a decrease in leaf area.

It should be noted that during July and August there are potential implications regarding protected species - see next section: Legal Status.

All tree works should comply with BS3998: (2010) Tree Work - Recommendations.

Arborists carrying out the work should be suitably qualified and insured

Legal Status

No details have been requested from the Local Planning Authority (LPA) as to whether the tree on the site is within a Conservation Area or protected by a Tree Preservation Order (TPO).

Prior to any works to prune or remove a tree within a Conservation Area or protected by a TPO written consent from the LPA is required.

Care should be taken in regard to species and their habitats that are protected under the Wildlife and Countryside Act 1981, the Countryside and Rights of Way Act 2000 (CRoW Act) and the consolidation of the Conservation of Habitats and Species Regulations 2010 (the 'Habitat Regulations 2017').

With tree work this particularly refers to birds and bats.

Ideally, if possible, work should be undertaken outside of the bird nesting season (March to September).

A scoping survey that identifies Potential Bat Features (PRF's) and the likelihood of a tree being used by bats is included as part of the Visual Tree Assessment. This survey follows BS8596: (2015) Surveying for Bats in Trees and Woodland - Guide. Trees are rated as Negligible / Low / Medium / High / Confirmed.

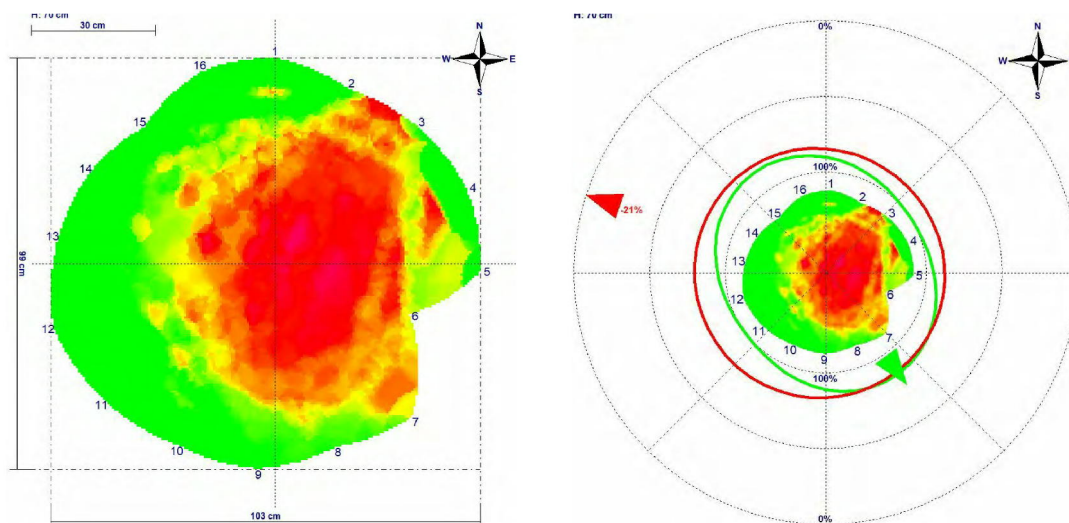
A Negligible or Low rating means that no further action is required, and works can be carried out on the tree.

If rated as Medium, tree surgery works should only proceed with caution, with the arborist following best practice.

If rated as High, a Secondary Survey should be carried out to confirm or discount the presence of bats.

If Confirmed, either from the Scoping Survey or Secondary Survey, a Natural England European Protected Species Licence will be required, and a Licensed Bat Worker must be contacted and involved in the process.

Internal Decay Assessment



The tree T133 is a mature red oak (Appendix C - Images 1 and 2).

The tree has been crown reduced historically - this heavy reduction has resulted in relatively large wounds in the upper crown - these aerate the vascular system and will accelerate the stem decay (Appendix C - Image 4).

There is a large wound on the north side of the stem from 0.5 metres to 1.8 metres. The stem sounds decayed (using sounding mallet) around the entire circumference at 0.7 metres. There is good reaction wood development around the wound that will partially mitigate the decay (Appendix C - Image 3).

The tomogram shows that the extent of decay is extensive and the resulting mechanical strength loss is significant at 21%. The tree can be retained with a reduction in wind loading - pruning the crown back to previous points is recommended (See Appendix B for details).

Tree Survey Results

Tree Data

Tree survey data can be found in the following appendices:

- Tree Survey Plan - Appendix A
- Tree Schedule (inc, notes and recommendations) - Appendix B

Issued separately and in addition to this report to facilitate organisation and implementation of works:

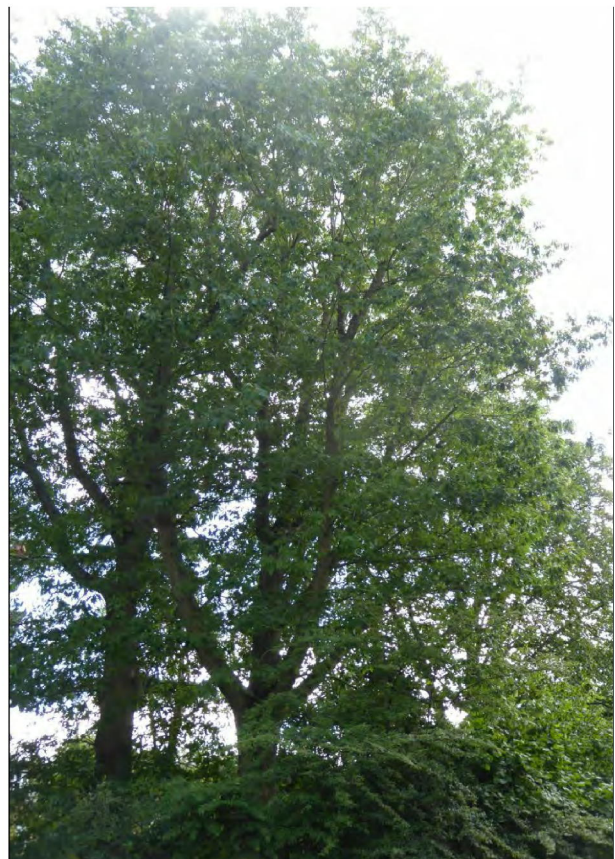
- Tree Survey Plan
- Tree Schedule (in .XLS format to enable filtering of priorities, and has an additional column to record date work is completed).

Recommendations

The usage of the site is **High**.

A re-assessment of the extent of decay should be carried out in **3 years**

Prioritised tree works can be found in the Tree Schedule - Appendix B



Appendix A - Tree Survey Plan



Key

- Works within 7 Days
- Works within 1 month
- Works within 3 months
- Works within 6 months
- Works within 1 year
- Works within 2 years
- No work required

Do not scale from this drawing, tree positions and dimensions should always be checked on site.
The original of this drawing is in colour, do not rely on monochrome versions.
This drawing is copyright Tracy Clarke Tree Consultancy Ltd.

Scale 1:500 @ A3

Date	Revision	Description
	1	Tree Risk Survey

Client
Spedan Tower MCL

Site
Savoy Court, Firecrest Drive,
NW3 7NF

Ref: TCTC-19901-00-01	Rev: -	Scale: 1:500 @ A3
Status: Final	Date: July 2023	Drawn By: AC

TRACY CLARKE
TREE CONSULTANCY

Appendix B - Tree Schedule

Tree Risk Schedule and Recommendations



Site: Savoy Court

Date: July 2023

Tree / Group No.	Tag Number	Species	Number of Stems	Height (m)	DBH (cm)	Crown Spread (m)	Bark Potential	Vitality	Age Class	Physiological Condition	Structural Condition	Targets	Notes and Observations	Recommended works	Priority
T133	Not tagged	Quercus rubra (Red Oak)	1	18	91	12	M	High	Mature	Good	Poor	Building within falling distance of tree Road within falling distance of tree	Tree has been crown reduced historically - heavy reduction resulting in relatively large wounds in upper crown - these aerate the vascular system and will accelerate the stem decay. Decayed pruning wounds - including main stem at 2 metres on south side. Large wound on north side of stem from 0.5 metres to 1.8 metres. Stem sounds decayed (using sounding mallet) around entire circumference at 0.7 metres. Good reaction wood development around wound will partially mitigate decay. Tomography confirms decay is extensive and mechanical strength loss significant.	Reduce crown back to previous pruning points	3 months

Appendix C - Images

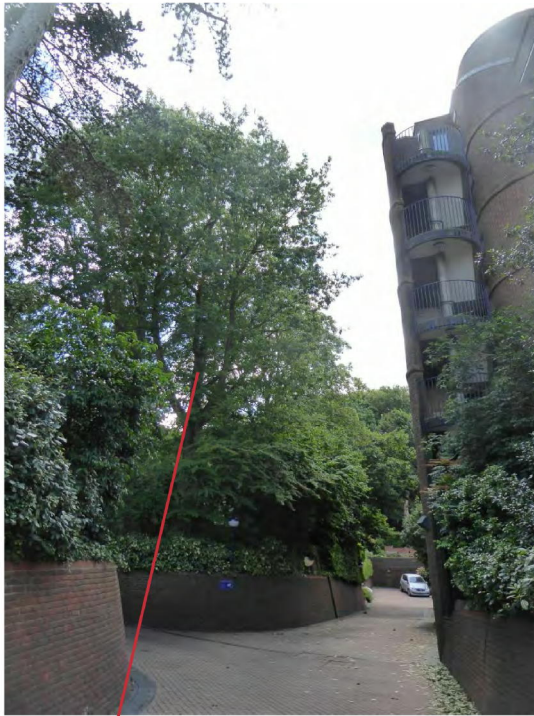


Image 1 - T133



Image 2 - T133

Appendix C - Images



Image 3 - T133 - Decayed stem



Image 4 - T133 - Previous pruning points

Appendix D - Definition of Terms

Tree / Group / No:	Identification reference T= individual tree, G = groups of – this is the number shown on the Tree Survey Plans	
Tag Number	Number stamped on tag that is nailed to tree to identify it, enabling certainty when carrying out recommended works by cross referencing with T or G number on plan	
Species:	Botanical and Common name	
Height:	Estimated height of tree in metres (to the nearest m)	
DBH:	Estimated stem diameter taken at 1.5m above ground level, in centimetres	
Crown Spread:	Estimated crown spread averaged over the four cardinal points N, E, S, W	
Vitality <i>(dynamic characteristic):</i>	Normal	Normal growth for the species in its environment
	Moderate	Below normal growth for the species in its environment
	Poor	Sparse / weak growth for the species in its environment
	Dead	A dead tree, no live growth, cannot be considered a veteran tree despite size
Age Class	Young (Y)	A small tree that has been recently planted, or an establishing tree naturally self-sown in the very early stages of growth for its species
	Semi mature (SM)	An established tree in the first third of the life span for its species with significant growth potential
	Early mature (EM)	Tree in the second third of the life span for its species, with some growth potential but is less vigorous / slowing down
	Mature (M)	Tree that has reached its optimum crown size and growth potential for its species, in its last third of expected life span for its species
	Over mature (OM)	Declining tree, and / or approaching the end of its natural lifespan for its species
Physiological condition	Good	Generally good healthy specimen for the species, full, healthy crown density, normal extension growth, foliage colour and size normal, limited deadwood, functioning well and able to adapt well to its environment
	Fair	Showing minor signs of decline, slow extension growth, possibly yellowing leaves, numerous deadwood present
	Poor	Trees with poor crown density for its age and species, small developed leaves, limited extension growth, generally functioning poorly, in decline, major deadwood present
Structural condition	Good	A tree showing no adverse risk of failure, minor defects or weak characteristics, with little overall significance
	Fair	A tree with defects that may require works to remove or improve the defect
	Poor	A tree with major structural defects, unlikely to return to a good structural condition following remedial works, may have significant decay, cavities, cracks, splits
Deadwood	Twigs	Diameter up to 10mm
	Minor	Diameter 10-50mm
	Major	Diameter >50mm
Site factors	Common site factors that should be considered that may influence the likelihood of tree failure	
Target	People or property at risk from the tree / groups	
Priority for works	A = immediate, D7 = within 7 days, M1 = within a month, M6 = within 6 months, Y01 = within 1 year, Y02 = within 2 years, Y03 = within 3 years, Y05 = within 5 years	
	Guided by THREATS (Tree Hazard: Risk evaluation and Treatment System) method to guide m/ recommendations and prioritisation for works. For further information on this method please refer to http://www.fbac.uk.com/wp-content/uploads/2010/07/THREATS-GH-JUNE-2010.pdf	

Appendix E - Qualifications

Ade Clarke, a qualified arboriculturist with extensive experience spanning thirty years working with trees. Areas of expertise include tree risk, ancient tree and woodland management.

An experienced tree surveyor managing tree risk at various levels - from surveying to managing policy and procedures as well as delivering training to surveyors and to those responsible for the management of tree populations.

Ade has been involved with ancient trees since 1992, and over that period has experience of every aspect of ancient tree management, from practical hands-on management, surveying, contract management, the management of ancient trees in relation to risk, and finally strategic responsibility for one of Europe's most important ancient tree populations.

Over the last few years, Ade has also specialised in the very detailed analysis of tree condition and structural integrity with the use of tomography, aerial tomography, and stability assessments. With this specialist equipment and the analysis of the additional data it provides, we are able to determine more refined safety factors that often enables the retention of the most valuable trees in high target areas that otherwise may be removed or have inappropriate tree surgery carried out due to the perceived risk.

Ade Clarke is a Chartered Forester, a Registered Consultant and Professional Member with the Institute of Chartered Foresters, and a Professional Member of the Arboricultural Association.



Ade Clarke MICFor. MArborA

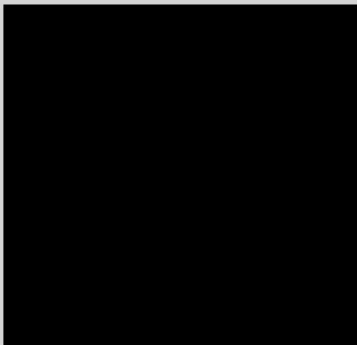
 Institute of
Chartered Foresters
Registered Consultant

 Arboricultural
ASSOCIATION
Professional Member



TREE ANALYTICS

Excellence in Arboriculture



TRACY CLARKE
TREE CONSULTANCY